

(TMI Journeys - April 2018)

## **Mind Mirror Measurements: “Journey to Happiness” Program June 2017**

*by Judith Pennington*

*In June 2017 The Monroe Institute welcomed Judith Pennington and her team to monitor participants' brainwave activities and record real-time EEG feedback with the Mind Mirror™ system during the "Journeys to Happiness" program meditation exercises. The results are outlined in this Executive Summary submitted by Judith Pennington on August 24, 2017.*

### **Executive Summary**

by Judith Pennington, Founder of The Institute for the Awakened Mind

Of the 14 people measured with the Mind Mirror EEG during “Journey to Happiness,” all showed advanced brainwave patterns during one or more segments of the Opening Baseline for Eyes Open, Eyes Closed, and the Animal Sensualization, even though two participants had no previous meditation experience. This was a particularly advanced group of people.

Everyone responded to the SAM audio frequencies by producing consistent surges of gamma in the 35-45 hertz (Hz) range and some in much higher frequencies. Because of the SAM frequencies and/or the cumulative effects of the training, everyone increased their statistical scores during the Closing Baseline in one or more of the three brainwave patterns measured: the Awakened Mind of creative flow and peak performance, the Evolved Mind of unity consciousness, and/or the Gamma Synchrony of the superconscious mind.

The advancement in their patterns matched the content of their Closing Self-Assessment, which comments ranged from a report by a non-meditator that “I have gained some insights into my emotional state,” to a more elaborate report by the only other non-meditator: “I learned that I have the ability to center myself, and feel better, with a few simple tools. I feel that I have a strong reason to be happy; to make the world a better place.” As non-meditators, these two participants are good controls for the group.

All of the participants reported an expansion of consciousness during the week, and several said their dreams were more vivid and memorable. One of these enhanced dreamers was a frequent TMI visitor who wrote in his Closing Self-Assessment that he felt quieter, more focused, and more grounded, and that he learned more about his pursuit of happiness in this lifetime. Another frequent TMI visitor reported that “I had never really felt SAM frequencies before. I moved into the meditative states ... By the end of the week, I felt relaxed and stress-free.”

Not everyone enjoyed all of the SAM meditations for a variety of reasons including fatigue, physical discomfort in the anti-gravity chairs, electrode pressures on the scalp, boredom, or their tendency to fall asleep or into a subconscious trance. However, everyone gained valuable and often life-changing insights and experienced universal love and connection in at least one meditation.

These conclusions are confirmed by a Gamma Synchrony statistical chart in Excel, where one star means “had an experience” and two stars means “had a profound experience”; by a Compilation of Abstracts for the Awakened Mind, Evolved Mind, and Gamma Synchrony statistics for each person, and a summary of their overall experiences during the week; and Completed Reports for all 14 people, which detail information on their brainwave patterns, changes, statistics, and experiences of each meditation.

Aside from the Hemi-Sync and SAM meditations, all 14 participants derived meaningful and even profound insights from the Animal Sensualization in either the Opening or Closing Baseline or both. The insights received by two Awakened Mind-producers during the Awakened Mind Animal Sensualization undoubtedly increased their overall satisfaction with the training.

### **Gamma and Awakened Mind Increases**

The scientific research of biophysicist Beverly Rubik, PhD, identifies 40Hz gamma as the realm of brain coherence and mystical transcendence. Other researchers, such as neuroscientists Richard Davidson and Wolf Singer, associate gamma with attentional awareness and whole-brain synchrony—that is, coherence across the range of brainwave frequencies and regions (when it is not part of a stress pattern in high beta/low gamma).

This study confirms that the characteristics of gamma are not only coherence, peaceful transcendence and/or mystical union, but also that in a very real sense gamma “powers up” the brain into either a more advanced brainwave pattern or greater voltages in alpha and/or the full range of Mind Mirror frequencies, all the way up to 100 Hertz.

**Voltage Increases.** Meditation optimizes the brain and for some people decreases brain voltage during meditation; over time, however, the practice of meditation typically increases brain voltage and, with that, the brain/mind’s power and potential. From the Opening to Closing Baseline, several Journey to Happiness participants increased their voltages. Their voltage (amplitude) increases mostly occurred in the alpha range (suggestive of increased relaxation and sensory awareness) between 1 and 4 microvolts (uV). One person increased her alpha amplitude during the Closing Baseline’s Eyes Closed segment by 10uV. This is highly significant and may be why, in her Closing Self-Assessment, she reported feeling calmer and more integrated. A second voltage increaser reported feeling, after the training, that his state of mind had shifted from average to “close to excellent”; a third person felt quieter and more

grounded and focused; another felt more aware; and still another reported feeling more relaxed, stress-free and better able to slip into altered states. Their brains powered-up during only six days of meditation, albeit an intensive training; therefore, we conclude that this change can be directly attributed to the SAM exercises.

**High Gamma Synchrony Scores.** More than half of the participants produced very high to extremely high Gamma Synchrony scores in the 35-45Hz frequency range for brain coherence and transcendence. Their statistics reflect a remarkable 42% to 88% attainment of the pattern ratios for Gamma Synchrony's Superconscious Mind. Becky Carroll's (name used with permission) extremely high Gamma Synchrony scores of 82% to 88% for all of the Hemi-Sync/SAM meditations, and a change from her Opening to Closing Baseline of 53% to 97% are unprecedented and much higher than those of mediums, psychics, advanced meditators, and other spiritually developed people who have been studied on the Mind Mirror 6.

Several other participants scored very high statistics during particular meditations: 74%, 73% and 60% during Who is Happy, 72% and 63% in Crystal Clarity, 55% in Set Point, and 42% during Vibe Flow.

Percentages this high for Gamma Synchrony are also attributed to the SAM frequencies, although co-factors must include their previous experiences at TMI, their meditation/spiritual practices, and the enduring effects of previous meditations during the week.

**High Awakened Mind Scores.** Four participants scored relatively low for Gamma Synchrony, ranging from 6% to 35% pattern attainment. However, all of these participants had at least one profound experience in SAM within the Awakened Mind and Evolved Mind patterns. One person's "aha" insight surfaced during the Closing Baseline's Animal Sensualization, by definition an Awakened Mind meditation. He scored an Opening 77% to Closing 78% with Eyes Open for the Awakened Mind.

Seasoned meditators typically score between 75% and 98% for the Awakened Mind with Eyes Closed at Training Level 5. Most people do not produce eyes-open alpha and must be trained to produce it as the basis of the externalized Awakened Mind pattern. Most notably, several participants who scored low in Gamma Synchrony increased their Eyes Open Awakened Mind scores, signifying an increase in their alpha-theta amplitudes. From the Opening to Closing Baseline, we see impressive eyes-open increases due to the SAM meditations in several people: 1/ from 45% to 66%, 2/ from 54% to 70%, 3/ from 67% to 70%, 4/ from 24% to 68%; 5/ from 80% to 94%, and 6/ from 55% to 67%.

Although Eyes Open is an unreliable measurement for the Evolved Mind and Gamma Synchrony patterns, as these can involve low-amplitude alpha which is computed by the software as advanced patterns, the Eyes Open Awakened Mind is an excellent measurement of increases in alpha. Increasing the alpha amplitude during Eyes Open is one of the major

goals of Awakened Mind meditation training: it means that the meditator has externalized the ideal Awakened Mind state to everyday waking awareness and is therefore more “awake” to self, others, and the spiritual dimensions of life.

The SAM exercises were clearly responsible for these Eyes Open Awakened Mind increases, which amount to immense strides in consciousness over a very short period of time.

### **The Effects of Gamma Synchrony**

Each of the participants who scored comparatively low for Gamma Synchrony nevertheless produced sustained surges of gamma in at least the 35-45Hz range and reported experiences of higher awareness, whether the content was understood or not. For example, in Set Point, one of the non-meditators (Gamma Synchrony 25%) felt gratitude for his life and found himself in a house exploring rooms containing objects he could not identify. In the same meditation, a TMI adherent (GS 10%) met a spiritual lady who advised him to let go and surrender. In Happy, another TMI adherent (GS 19%) produced amplitudes in the 35-45Hz Low Gamma and 45-65Hz Mid Gamma range as he realized that what he offers the world is unconditional love.

In Virtuality, the second non-meditator (GS 31%) encountered her love for painting and insights about the fear which keeps her from it. In Loving Kindness, a TMI adherent (GS 16%) saw colors, felt positive emotions, and had a mystical experience.

What the above tells us is that statistics aren't everything, especially for the latter person, whose acute pain and discomfort in her neck created so much sEMG tension that none of her Mind Mirror readings could be deemed valid. In her case, we can rely only on her subjective report. Several other people who reported discomfort of various kinds managed to get comfortable enough for their measurements to be considered valid.

### **Original versus New EEG Sensor Measurements**

Four people were monitored on the original 0.5-64Hz EEG sensors which measures 0.5 to 64Hz. The remaining 10 people were measured on the new 0.5-100Hz sensor.

Journey to Happiness included two meditations, Loving Kindness and Set Point, with SAM frequencies extending up to 80Hz; Presence included 80 and 120Hz beat frequencies. Presence evoked profound experiences in several people, whose Gamma Synchrony statistics at Training Level 5 were 88%, 53%, 45%, and 68%. Some of the people who reported few insights in other meditations had at least some experience in Presence's very high gamma frequencies, despite their low Gamma Synchrony scores of 5%, 16%, and 4%.

The Gamma Synchrony pattern includes frequencies ranging up to 64Hz on the Mind Mirror display. Until the new 100Hz sensor was used en masse during Journey to Happiness, Mind Mirror researchers did not know what the extended frequencies would look like in the brainwave display above 64Hz. Four people consistently produced enough Upper Gamma (65-100Hz) to demonstrate that the Awakened Mind, Evolved Mind, and Gamma Synchrony patterns maintain their distinctive shapes across the full 0.5 to 100Hz range of frequencies. For the Mind Mirror community, this was an unexpected and exciting discovery.

### **The Effects of Gamma on the Awakened and Evolved Mind Patterns**

Why one person's brain responds with great ease to the SAM frequencies and another person's less so is still unknown. We did note that four people who regularly or occasionally practice Hemi-Sync or SAM meditation reaped the greatest benefits during the training. We also found that some practitioners scored comparatively low for Gamma Synchrony and transcendent experience due to a low 9Hz alpha peak (see below for more on this). That the two people with no previous meditation or Hemi-Sync/SAM experience produced sustained surges of gamma, gained profound insights, and at times attained very high Gamma Synchrony scores confirms the effects of SAM on non-meditators.

It is important to note that the SAM frequencies evoked Awakened Mind and Evolved Mind patterns in all 14 participants, and the vast majority of them increased their Awakened Mind and Evolved Mind statistics from the Opening to Closing Baselines. Their increases in the Awakened Mind's peak performance and the Evolved Mind's unity consciousness patterns validate our database finding that a higher state of consciousness (Gamma Synchrony) informs and stabilizes the Evolved Mind and Awakened Mind patterns. It is possible that gamma frequencies stimulate these patterns.

One participant is a case in point. Despite his relatively low Gamma Synchrony scores, from the Opening to Closing Baseline his statistics for the Evolved Mind increased significantly (Eyes Open 1-6%, Eyes Closed 2-35%, Animal Sensualization 4-14%). For this primarily Awakened Mind producer, the gamma in the various SAM meditations surged in all of the meditations but not enough to qualify as Gamma Synchrony. Instead, his gamma surges increased the amplitudes of the gamma frequencies at the top of his Evolved Mind brainwave pattern. This equates to brain/mind evolution of lasting effect.

Such increases in the Awakened and Evolved Mind patterns can only be attributed to the individual SAM experiences. The training also increased eyes-open Evolved Mind statistics, from the Opening to Closing Baselines, in three other people.

Quite a few participants felt more "awake," in general, by the end of the training. This can only owe to the SAM meditations.

## **The Low Alpha Peak**

Six out of 14 people meditated with a 9Hz alpha peak which occasionally or consistently caused them to drift down into subconscious theta trance and unconscious delta sleep. These were the participants with the fewest profound experiences during the week; they also showed the lowest Gamma Synchrony scores, except on occasion, because their amplitudes were greatest in theta and delta. High-amplitude theta and delta can evoke gamma, but do not always do so.

The Mind Mirror monitors showed these participants their brainwave patterns, and upon receiving their subjective reports of non-attainment of transcendent experiences, pointed out their 9Hz alpha peak. A 9Hz alpha peak is typically desirable, as it allows the meditator to deepen into subconscious content. But it is also a gateway to non-conscious sleep or trance. For the meditator, the result of sleep or trance can be frustration and confusion, especially because he or she may have had powerful insights, but was unable to access them consciously during the meditation or recall them after the meditation. Imagery is usually hazy, inaccessible, or meaningless.

The Mind Mirror monitors suggested to these 9Hz alpha peak participants ways to sharpen their sensory awareness in order to bring their alpha peak up to the classic 10.5Hz. Some of them were able to do so, and they learned to stay awake during the meditation, retrieve insights, and on occasion, ride the gamma beats into higher levels of awareness.

## **Conclusion**

In terms of personal insights, profound realizations, and statistical increases in the Awakened Mind, Evolved Mind and/or Gamma Synchrony brainwave patterns, all 14 participants benefitted from Journey to Happiness. Everyone reported feeling more balanced, coherent, grounded, and/or happier. The highest gamma producers and a few of the lowest gamma producers reported that the training gave them a new lease on life.

## **Recommendations**

Although, as mentioned earlier, there is no across-the-board explanation for why some people responded better to the SAM frequencies than others, it is clear that those who attained few insights or transcendent experiences were producing a low 9Hz alpha peak not accompanied by 10.5Hz alpha. One person produced a highly amplified 10.5Hz alpha peak without enough 9Hz alpha to access his theta subconscious or much gamma.

Mind Mirror training would help these meditators adjust their alpha for better access to the subconscious/superconscious levels of the mind and to better recall events occurring therein. Mind Mirror training would also help these meditators clear any psycho-spiritual issues that

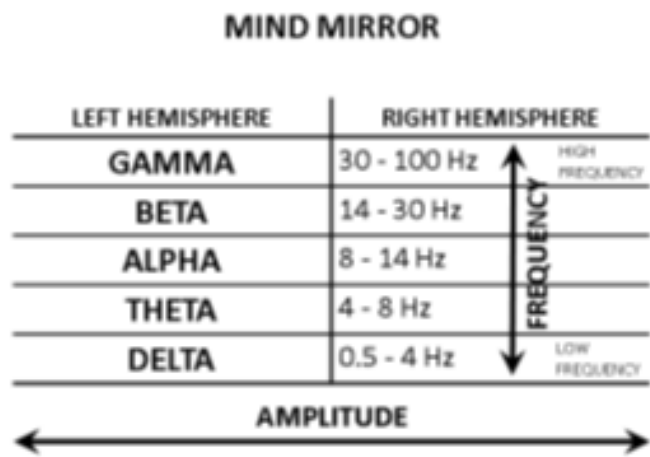
might block the SAM frequencies and their exploration of lower and higher frequencies of consciousness.

The Mind Mirror community appreciated this opportunity to explore consciousness with The Monroe Institute. It will be our pleasure and privilege to continue to work with TMI in future studies.

*Submitted by Judith Pennington on August 24, 2017*

WHAT IS THE MIND MIRROR? The Vilistus Mind Mirror 6 used in this study is a unique, dual-hemisphere electroencephalograph (EEG) that maps the interrelationships of brainwave frequencies and categories and thereby depicts states of consciousness. The Mind Mirror was invented by British biophysicist, psychobiologist, and meditation master C. Maxwell Cade in 1976. Cade used it to study the brainwave patterns of more than 4,000 people, including advanced meditators, psychics, dowsers, mediums, healers, and other highly developed and spiritually conscious people. Through these studies, he discovered the ideal Awakened Mind pattern of clarity, creativity, insight, intuition, and spiritual connection.

The three brainwave patterns that are produced during higher states of awareness: 1/ the Awakened Mind of creative problem-solving, “aha” insights and peak performance; 2/ the Evolved Mind of egoic surrender, bliss, and unity consciousness; and 3/ the Gamma Synchrony pattern of the Superconscious Mind, consisting of enhanced creativity, insights, and cognition, and compassion, transcendence, and mystical union.



The Awakened Mind and Evolved Mind patterns are composed of frequencies ranging from 0.5 to 44 hertz, which is inclusive of Low Gamma (30-43Hz). The Gamma Synchrony pattern adds 44-64Hz frequencies to the pattern and encompasses 0.5 to 64Hz.

